

prudence, diligence, and due care, we may allow more time to complete testing or we may waive the in-use testing requirement for an engine family. For example, if your test fleet is destroyed by severe weather during service accumulation and we agree that completion of testing is not possible, we would generally waive testing requirements for that engine family.

[73 FR 59194, Oct. 8, 2008, as amended at 75 FR 23020, Apr. 30, 2010]

**§ 1045.410 How must I select, prepare, and test my in-use engines?**

(a) You may make arrangements to select representative test engines from your own fleet or from other independent sources.

(b) For the selected engine families, select engines that you or your customers have—

(1) Operated for at least 50 percent of the engine family's useful life (see § 1045.103(e));

(2) Not maintained or used in an abnormal way; and

(3) Documented in terms of total hours of operation, maintenance, operating conditions, and storage.

(c) Use the following methods to determine the number of engines you must test in each engine family:

(1) Test at least two engines if you produce 2,000 or fewer engines in the model year from all engine families, or if you produce 500 or fewer engines from the selected engine family. Otherwise, test at least four engines.

(2) If you successfully complete an in-use test program on an engine family and later certify an equivalent engine family with carryover emission data, as described in § 1045.235(d)(1), then test at least one engine instead of the testing rates in paragraph (c)(1) of this section.

(3) If you test the minimum required number of engines and all comply fully with emission standards, you may stop testing.

(4) For each engine that fails any applicable emission standard, test two more. Regardless of measured emission levels, you do not have to test more than ten engines in an engine family. You may do more tests than we require.

(5) You may concede that the engine family does not comply before testing a total of ten engines.

(6) In appropriate extreme and unusual circumstances that could not have been avoided by the exercise of prudence, diligence, and due care, we may waive the in-use testing requirement for an engine family.

(d) You may do minimal maintenance to set components of a test engine to specifications for anything we do not consider an adjustable parameter (see § 1045.205(r)). Limit maintenance to what is in the owner's instructions for engines with that amount of service and age. Document all maintenance and adjustments.

(e) You may do repeat measurements with a test engine; however, you must conduct the same number of tests on each engine.

(f) For a test program on an engine family, choose one of the following methods to test your engines:

(1) Remove the selected engines for testing in a laboratory. Use the applicable procedures in subpart F of this part to show compliance with the duty-cycle standards in § 1045.103(a) or § 1045.105(a). We may direct you to measure emissions on the dynamometer using the test procedures in § 1045.515 to show compliance with the not-to-exceed standards in § 1045.107.

(2) Test the selected engines while they remain installed in the vessel. Use the procedures in § 1045.515. Measure emissions during normal operation of the vessel to show compliance with the not-to-exceed standards in § 1045.107. We may direct you to include specific areas of normal operation.

(g) You may ask us to waive parts of the prescribed test procedures if they are not necessary to determine in-use compliance.

(h) Calculate the average emission levels for an engine family from the results for the set of tested engines. Round them to the number of decimal places in the emission standards expressed to one more decimal place.

**§ 1045.415 What happens if in-use engines do not meet requirements?**

(a) Determine the reason each in-use engine exceeds the emission standards.